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10/539,020	06/15/2005	Jun Yamamoto	Q88367	7381
23373 7590 04/14/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER				
VADEN, KENNETH I				
ART UNIT		PAPER NUMBER		
1793				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/539,020

**Applicant(s)**

YAMAMOTO, JUN

**Examiner**

KENNETH VADEN

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

*The nonstatutory double patenting rejection of claims 1 and 9 stands. No request for terminal disclaimer has been received. The U.S.C. paragraph 102(b) rejection of claims 1-10 have been changed to a U.S.C. paragraph 103(a) rejection because of the obviousness involving step three of claim 1.*

**Double Patenting**

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.

A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claim 9 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6323147.

Although the conflicting claims are not identical, they are not patentably distinct

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from each other because the catalyst obtained by the process according to claim 1 is encompassed by the catalyst as claimed in claim 1 of U.S. Patent Number 6323147.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6323147).

Regarding claim 1, Yamamoto "147" teaches the process for producing a titanium containing silicon oxide catalyst (Col. 8, lines 31-60) with an average pore diameter for the catalyst material of 10 Å or more, a pore size of 90% or more of the total pore volume of 5 to 200 Å, a specific pore size of 90% or more, a specific pore volume of 0.2 cm<sup>3</sup>/g or more and a quaternary ammonia ion

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represented by the formula: [NR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>R<sub>4</sub>] + where R<sub>1</sub> represents a linear or branched hydrocarbon chain having 10 to 36 carbon atoms, and R<sub>2</sub> and R<sub>4</sub> represent an alkyl group having 1 to 6 carbon atoms.

Regarding the first step of claim 1, Yamamoto "147" teaches obtaining a solid containing a catalyst component and a template by mixing and stirring a silica source, a titanium source and a quaternary ammonia ion as a template in a liquid state (Col 8, lines 64 –67 and Col. 9, lines 1-2).

Regarding step two of claim 1, the component (solid) is removed from the template using a solvent extraction using a solvent to remove the template (Col. 4, lines 4-19).

Regarding step three of claim 1, Yamamoto "147" also teaches that after the catalyst is mixed with solvent for solvent extraction and the liquid portion separated, the catalyst can be obtained by extracting the catalyst layer with a solvent for washing (col. 4, lines 40-44) and teaches that a solvent used for washing is toluene (col. 7, line 50). Thus if toluene is used for washing after solvent extraction, this obviously results in a third step of substituting the solvent used for the extraction with a solvent which is substantially inert to a silylating agent used in a subsequent step, as claimed.

Regarding step four, Yamamoto "147" teaches heating the mixture for one hour under reflux with stirring and removing the liquid, which corresponds to the step of obtaining a silylated catalyst by subjecting the solid to the procedure of step three.(Col 7, lines 47-48).

Regarding claim 2, Yamamoto "147" further teaches washing with toluene which is the same solvent as used in step four of silylation (Col. 7, line 49).

Regarding claim 3, Yamamoto "147" teaches the use of a template which a quaternary ammonium ion of the general formula  $[NR_1R_2R_3R_4]^+$ , where  $R_1$  is a linear to branched hydrocarbon chain having 10 to 36 carbon atoms, and  $R_2$  and  $R_4$  represent an alkyl group having 1 to 6 carbon atoms (Col. 10, lines 1-7).

Regarding claim 4, Yamamoto "147" teaches the process of molding the solid containing the catalyst component (Col. 7, lines 45-52).

Regarding claim 5 and 6, Yamamoto "147" teaches the use of an alcohol for extraction. (Col. 7, lines 39-43). One of the preferred alcohols for this purpose is methanol (Col. 3, line 33-37).

Regarding claims 7 and 8, Yamamoto "147" teaches the use of a hydrocarbon such as toluene for substitution (Col. 7, lines 30-55).

Regarding claim 9, Yamamoto "147" teaches obtaining of a titanium-containing silicon oxide catalyst (Col. 7, lines 42-63).

Regarding claim 10, Yamamoto "147" teaches production of an oxirane compound resulting from the reaction of an olefin compound with an organic hydroperoxide in the presence of the catalyst (Col. 6, lines 1-3).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH VADEN whose telephone number is (571)270-5824. The examiner can normally be reached on M-Th 7:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin Curtis Mayes can be reached on (571)272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kenneth Vaden  
4/9/2009

/Melvin Curtis Mayes/  
Supervisory Patent Examiner, Art Unit 1793